WHAT IS CLAIMED IS:

1. A high-frequency transceiver apparatus, wherein an antenna substrate made of a dielectric material and having an antenna conductor pattern formed thereon is bonded onto one surface of a base plate to transmit and receive a high frequency wave signal, and the flatness accuracy of a surface of said antenna substrate is set at $\lambda/20$ or less when λ denotes effective wavelength.

2. The high-frequency transceiver apparatus as set forth in claim 1, wherein a high-frequency circuit substrate made of a dielectric material and forming a transceiver circuit is provided on the other surface of said base plate.

3. The high-frequency transceiver apparatus as set forth in claim 2, wherein said transceiver circuit includes a circuit conductor pattern formed on the surface of said high-frequency circuit substrate and a semiconductor chip connected to said circuit conductor pattern, and said antenna conductor pattern is arranged as connected with a plurality of patch antenna elements.

4. The high-frequency transceiver apparatus as set forth in claim 2, wherein said antenna substrate and said high-frequency circuit substrate are integrally formed for transmission and reception.

5. The high-frequency transceiver apparatus as set forth in claim 3, wherein a cover having a radio

wave absorber is mounted on a surface of said base plate having the high-frequency circuit substrate mounted thereon.

6. The high-frequency transceiver apparatus as set forth in claim 5, wherein a projection is formed in the other surface of said base plate so as to surround a periphery of the high-frequency circuit substrate, and said cover having said radio wave absorber is mounted on an upper face of said projection.

7. The high-frequency transceiver apparatus as set forth in claim 1, wherein an effective wavelength frequency is any frequency in a range from 76 to 77GHz.

8. The high-frequency transceiver apparatus as set forth in claim 3, wherein said semiconductor chip is made of a compound of Ga and As, and said high-frequency circuit substrate is air-tightly sealed by joining the cover thereto.

9. The high-frequency transceiver apparatus as set forth in claim 1, wherein said base plate is formed by press processing.

10. The high-frequency transceiver apparatus as set forth in claim 9, wherein a surface of said base plate onto which said antenna substrate is to be bonded is subjected to annealing operation to remove distortion.

11. The high-frequency transceiver apparatus as set forth in claim 6, wherein said base plate is manufactured by shaping a metallic plate work into a

plate having dimensions corresponding nearly to an outer periphery of the projection, shaping said shaped plate into a plate having dimensions corresponding nearly to an inner periphery of said projection inside the projection, annealing said shaped plate to remove distortion, and then shaping the cover mounting face of said projection.

12. A high-frequency transceiver apparatus to be mounted on a car, wherein an antenna substrate having an antenna conductor pattern formed thereon as connected with a plurality of patch antenna elements is bonded onto one surface of a base plate, a high-frequency circuit substrate including a circuit conductor pattern and a semiconductor chip connected to said circuit conductor pattern is provided on the other surface of said base plate, said antenna substrate and said high-frequency circuit substrate are integrally formed for transmission and reception, a projection is formed on the other surface of said base plate so as to surround said high-frequency circuit substrate, a cover having a radio wave absorber is mounted on an upper face of said projection, said high-frequency transceiver apparatus for transmitting and receiving a high frequency wave signal is used for the purpose of detecting a distance between cars, and a flatness accuracy of a surface of said antenna substrate of the high-frequency transceiver apparatus is set at $\lambda/20$ or less when λ denotes effective wavelength, and an

effective frequency of the high-frequency transceiver apparatus is set at any frequency in a range from 76 to 77GHz.

13. The high-frequency transceiver apparatus as set forth in claim 12, wherein said base plate is formed by press processing.

14. The high-frequency transceiver apparatus as set forth in claim 12, wherein said base plate is manufactured by shaping a metallic plate work into a plate having dimensions corresponding nearly to an outer periphery of the projection, shaping said shaped plate into a plate having dimensions corresponding nearly to an inner periphery of said projection inside the projection, annealing said shaped plate to remove distortion, and then shaping the cover mounting face of said projection.